REMARKS

1. Claim Interpretations

The Office interpreted "morphing" as being equivalent to "changing" and "altering" based on the page 13 of the specification, lines 8-12. Applicant agrees with the Office's interpretation.

2. Claim Rejections -- 35 U.S.C. § 103

Claims 1-23 were rejected under 35 U.S.C. § 103 as being unpatentable over Maxley, R. and Olson, E., "New Riders' Reference Guide to AutoCAD Release 13. 1995. pp. 21-39, 63-66, 267, 284-285, 293-295, 304-305, 307-310, 377-380, 402-404, 490-492, 560-562, 642-644 (hereinafter referred to as "Maxley") in view of U.S. Patent number 5,950,374 (hereinafter referred to as "Gromat").

Applicant appreciates the concerns raised by the Examiner, but respectfully submits that in light of the arguments presented herein, neither Maxley nor Gromat, either individually or collectively, renders the claims of the present invention obvious.

An invention is unpatentable under 35 U.S.C. § 103 "if the differences between the subject matter sought to be patented over the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains." To establish a *prima facie* case of obviousness, three criteria must be met. "First, there must be some suggestion or motivation . . . to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." MPEP § 2142.

In addition, under 35 U.S.C. § 103, the scope and content of the prior art are to be determined; the differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. MPEP § 2141.

The prior art references do not teach or suggest all of the claim limitations of the present invention. MPEP § 2142. More specifically, Maxley does not teach the morphing and revising steps of independent claims 1, 6, 10, and 15 and the dragging and recalculating steps of independent claim 21. As a result, dependent claims 2-5, 7-9, 11-14, 16-20 and 22-23 stand in a condition for allowance because they place further limitations on what is otherwise argued allowable subject matter. In addition, Maxley also does not teach the partitioning limitation of dependent claims 2, 8, 11, 16 and 22.

For example, according to the specification, when an estimation polyhedron is morphed:

> The morphing process that the estimation polyhedron is subjected to, continuously revises and maintains the integrity of the volumetric entity or polyhedron. That is to say, any planes or polygons affected by the stretching or introduction of additional planes into the estimation polyhedron, triggers a recalculation of the attributes. . . of the affected and new planes of the estimation polyhedron.

Specification, Page 8, Lines 4-9. This recalculation takes place as the estimator graphically stretches and contracts the figure in various dimensions to better approximate the room undergoing estimation. Specification, Page 21, Lines 2-4. In contrast to the morphing process claimed and disclosed by the present invention which applies to volumetric polyhedrons (see Claims 1, 6, 10 and 15), the "Extend" command of Maxley is limited in that it does not apply to certain volumetric objects such as blocks or shapes (see p. 307). Also, the "Lengthen" command does not apply to closed objects (see p. 377) and the "Stretch" command does not apply to shapes and blocks (see p. 642).

Consequently, the morphing process of the present invention is neither taught nor suggested in Maxley.

In addition, the specification explains that the step of revising, which follows the step of morphing:

> Revises the estimation attributes of any selected and modified or additional polygons as well as adjacent polygons to the morphed or selected polygon as well as any other polygons affected by the morphing process. That is to say, vertices and other descriptors of the modified polygon are updated and stored including attributes such as the surface area associated with the affected polygons which are also updated consistent with the new dimensions resulting from the morphing process.

Specification, Page 21, Lines 12-18, emphasis added. While Maxley's "Massprop" command discloses calculating various properties (see p. 402) and Maxley's "Area" command discloses calculating the areas of various objects (see p. 63), neither command discloses the steps of revising or recalculating as explained in applicant's specification and claimed in independent claims 1, 6, 10, 15 and 21. Neither is the step of revising inherent nor implied by the disclosure in the prior art.

In fact the explicit limitations of these two commands teach away from the present invention. The "Area" command is functionally limited to calculating the area of an AutoCAD object or an area defined by a group of points (see p. 63) and the "Massprop" command is functionally limited to reporting the physical properties of selected objects. In contrast, independent claims 1, 6, 10, 15 and 21 claim revising or recalculating said at least one estimation attribute of said morphed facet and any adjacent facets of said estimation polyhedron also modified and affected by said step of morphing. Maxley's "Area" and "Massprop" commands do not mention the present invention's

revising and recalculating limitations; instead they only mention the functions of calculating an area and reporting physical properties.

This step of revising or recalculating is important to accurate and efficient estimation because morphed facets often change the attributes of adjacent facets. Accordingly, the revising and recalculating process of the present invention is neither taught nor suggested in Maxley.

Maxley also does not teach the partitioning limitation of dependent claims 2, 8, 11, 16 and 22. As explained in the applicant's specification, when an estimator carries out the step of partitioning a selected facet, "the estimation program enables the estimator to partition the [selected facet] into a series of additional planes. . . such planes replace the original [selected facet]. . . . When [a selected facet] is partitioned into additional morphed facets or planes, . . . the morphed planes or facets must be included within the definition of the estimation polyhedron." The definition of existing adjacent planes is revised and recalculated as explained above. Specification, Page 13, Lines 19-26; Page 14, Lines 1-14.

The Office has not shown that the step of partitioning is disclosed, inherent, or implicit in the prior art. For example, none of the prior art discloses the claimed features of claims 2, 8, 11, 16 and 22 of partitioning said selected facet of said estimation polyhedron into at least a first and second morphed facet to provide an improved estimation of said chamber undergoing estimation. Maxley's "3D mesh" command discloses creating a surface within a four-sided surface (see p. 39); the "Revsurf" command creates a polygon mesh defined by rotating a profile object around an axis of rotation (see p. 560); the "Edgesurf" command enables the creation of a four-sided mesh

that can be defined by arcs, lines, and open polylines (see p. 293); the "Explode" command enables the reduction of a complex object into its component parts (see p. 304); and finally, the "Pface" command creates a polygon mesh by locating points in 3D space and then connecting these points to form a face (see p. 490). None of these commands mentions partitioning a facet into a first and a second morphed facet or whether these commands improve estimation functionality. Consequently, the partitioning limitation of claims 2, 8, 11, 16 and 22 is neither taught nor suggested in Maxley.

Applicant respectfully submits that the Office has not shown that the references, alone or in any combination, teach or suggest the limitations discussed above. Consequently, one skilled in the art of AutoCAD would not think to combine the prefabricated building systems teachings of Gromat to create the morphing, revising and partitioning limitations of the present invention. Even if Gromat and Maxley are combined, all of the present invention's claim limitations are not taught or suggested because Maxley does not teach the morphing, revising and partitioning steps of the present invention. Accordingly, Applicant respectfully submits for at least these reasons the cited references do not make obvious claims 1-23 and requests that the rejection under 35 U.S.C. § 103 be withdrawn.

CONCLUSION

Based on the foregoing amendments and arguments, Applicant respectfully submits that the deficiencies in the application have been corrected and that the proposed claims are not rendered obvious by the prior art references cited by the Examiner. As such, Applicant believes that the claims are now in a condition for allowance, and action to that end is respectfully requested.

If any impediments to the allowance of this application for patent remain after the above amendments and remarks are entered, the Examiner is invited to initiate a telephone conference with the undersigned attorney of record.

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Respectfully submitted,

KIRTON & MCCONKIE

Michael F. Krieger
Attorney for Applicant
Registration No. 35,232

KIRTON & MCCONKIE
1800 Eagle Gate Tower
60 East South Temple Street
Salt Lake City, Utah 84111
(801) 328-3600 telephone
(801) 321-4893 facsimile

BO:

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